REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

After entry of the foregoing amendment, Claims 1, 3, 5-10, 21-23 and 25-62 are pending in the present application. Claims 1, 9, 10, 21, 23, 31, 34, 36, 37-40, 43, 44, 47, 51, 52, 54, 55, 58, 60 and 62 are amended to address cosmetic matters of form. Non-cosmetic changes find support at least at pages 7-11 and Figures 1-2 of the specification. Claims 46 and 61 are cancelled without prejudice or disclaimer. No new matter has been added.

By way of summary, the Official Action presents the following issues: Claims 10, 32-33, 40, 45-47, 55 and 60-61 are objected to under 37 C.F.R. § 1.75(c); Claims 1, 3, 5, 8-10, 21-23, 25-26, 29-40, 44-55 and 59-62 stand rejected under 35 U.S.C. 103 as being unpatentable over De Maine et al. (U.S. Patent No. 3,656,178, hereinafter "DeMaine") and further in view of Cellier et al. (U.S. Patent No. 5,884,269, hereinafter "Cellier") and further in view of Witten et al. ("On the Privacy Afforded by Adaptive Text Compression", hereinafter "Witten"); Claims 6-7 and 27-28 stand rejected under 35 U.S.C. § 103 as being unpatentable over De Main, Cellier, Witten and further in view of Shimizu et al. (U.S. Patent No. 6,772,343, hereinafter "Shimizu"); Claims 41-42 and 56-57 stand rejected under 35 U.S.C. § 103 as being unpatentable over De Maine, Cellier, Witten and further in view of Weiss (U.S. Patent No. 5,479,512); and Claims 41, 43, 56 and 58 stand rejected under 35 U.S.C. § 103 as being unpatentable over De Maine, Cellier, Witten and further in view of Butler et al. (U.S. Patent No. 5,861,887, hereinafter "Butler").

OBJECTIONS TO THE CLAIMS

The Official Action has objected to Claims 10, 32-33, 40, 45-47, 55 and 60-61 under 37 C.F.R. § 1.75(c) as being improper dependent form for failing to further limit the subject matter of a previous claim.

In the Official Action, this objection is explained as:

> These claims each require that the control code be generated based on frequency analysis of the input data string, while the independent claims recite that the control code is generated independent of specific characteristics of the input data string. (emphasis added)

Applicant respectfully submits that the above-noted explanation is in error. The rejected depending claims are directed to the "determining an order" feature of the independent claims. Simply stated, the method of identifying a control code is different from determining an order in which to query the presence of each of 2^n different configurations of n bits and an input data string.[1] Moreover, Applicant has amended the independent claims to clarify the relationship between the claimed control code identification and the claimed "determining an order".

As such, Applicant respectfully requests that the objection to Claims 10, 32-33, 40, 45-47, 55 and 60-61 under 37 C.F.R. § 1.75(c) be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

The Official Action has outlined rejections of Claims 1, 3, 5, 8-10, 21-23, 25, 26, 29-40, 44-55, and 59-61 under 35 U.S.C. § 103 as being unpatentable over De Maine and Cellier in view of Witten. The Official Action contends that De Maine and Cellier disclose all of the Applicant's claim features, with the exception of an independently selected control code. However, the Official Action cites Witten as disclosing this more detailed aspect of the Applicant's claimed advancement and states that it would have been obvious to one skilled in the art at the time the advancement was made to combine the cited references for arriving at the Applicant's claims. Applicants respectfully traverse the rejection.

[1] For example, see page 5 of the specification which discusses data analysis for determining an order in which to query the input data string and section (d) which deals with control code selection.

Applicant's amended Claim1 recites, *inter alia*, a method for encrypting an input data string including a plurality of bits of binary data, including:

> . . . providing a control code index in the memory, the control code index being defined prior to encryption at the processing device, the control code index including a plurality of control codes each defining respective orders of n bit combinations of binary data;
>
> determining an order in which to query the presence of each of 2^n different configurations of n bits within the input data string;
>
> identifying a control code associated with the determined order using the control code index;
>
> generating a position code using the identified control code in cooperation with a position code routine associated with the identified control code to determine positions of each of the 2^n different configurations of n bits in the input data string by comparing the 2^n different configurations of the input data string with the associated 2^n bit configurations of the identified control code, the comparisons resulting in output values dictated by the position code routine which defines the generated position code; and
>
> combining the identified control code and the generated position code as components of an encrypted data string. (emphasis added)

De Maine describes four compression techniques (i) Slow Mode Type 1 compression, (ii) Slow Mode Type 2 compression, (iii) Fast Mode Type 1 compression, and (iv) Fast Mode Type 2 compression. Slow Mode Type 1 compression and Slow Mode Type 2 compression, begin with an initial analysis of the input data string.[2] More specifically, those byte configurations that are identified is not appearing in the input data string or designated Type 1 codes and those byte configurations that are identified as appearing more than a certain number of times within the input data string are designated as Type 2 codes. Likewise, in Fast Mode Type 1 and Fast Mode Type 2 compression, a PCORDS table is utilized which is created based upon an analysis of input data string characteristics.

Cellier describes selecting a best table of Huffman codes through the use of a best table selector (103) on the basis of a minimum cost search. In other words, the table selector (103) selects that Huffman table which when used to encode the current frame of error

[2] De Maine at column 91, lines 47-65.

samples will yield the most compact encoded representation.[3] As noted at column 13, lines 24-33 of Cellier, bits 0-7 of word (702) embody a TABLE SELECT field, which identifies a specific Huffman table that was used to encode a current block of audio data. In other words, for each block of encoded data, a TABLE SELECT field will identify a specific Huffman table which was used to encode the corresponding block.

Witten describes a system for adaptive text compression in which transmitted text may be represented by randomly generated numbers.[4]

Conversely, in an exemplary embodiment of the Applicant's claimed advancement, a method of encrypting an input data string including a plurality of bits of binary data is provided. The input data string is received for encryption at a processing device. A control code index is provided in memory. The control code index is defined prior to an encryption at the processing device. The control code index includes a plurality of control codes each defining respective orders of n bit combinations of binary data . An order in which to query the presence of each of 2^n different configurations of n bits is determined with respect to the input data string. A control code is identified which is associated with the determined order using a control code index. A position code is generated using the identified control code in cooperation with a position_code routine associated with the identified control code to determine positions of each the 2^n different configurations of n bits in the input data string. The position code is generated by comparing the 2^n different configurations of the input data string with the associated 2^n bit configurations of the identified control code. The comparison results in output values dictated by the position code routine which define the position code. The identified control code and the generated position code are combined as components of an encrypted data string.

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[3] Cellier at column 4, lines 46-56.
[4] See Witten at section 7.

For example, where the input data string is comprised of groups of two bits of data, there are four different combinations of two bits (i.e., 00, 01, 10, 11). In this case, the input string may be queried as to a specific determined order. In other words, it may be desirable, for example, to seek out groups of bits that match each of the four combinations based upon a relative frequency of the combinations appearing in the input data string.[5] Once an order to query the input data string is determined, a control code of a control index is identified which corresponds to the determined order. In other words, the four combinations of two bits (00, 01, 10, 11) can be arranged in 24 different orders. One or more different control codes can be assigned to the same order of the combinations of bits as shown in control code index (60).[6] Each different control code can signify that a different position code routine is used to generate a position code. Once the control code is identified, a position code is generated by comparing whether or not each of the combinations of bits of the associated 2^n bit configurations of the identified control code matches the successive groups of bits of the input data string. Thus, with the two bit example above, starting with the first group of two bits the group of bits is compared with the first combination of bits, as identified in the control code to determine whether or not two sets of bits match. If they do match, a "1" may be recorded to signify a match a that position in accordance with the position code routine. Likewise, if they do not match, a "0" is recorded to signify a non-match at the position. This process is repeated until each of the successive groups of bits has been compared with the first combination of the identified control code.[7]

As noted above, De Maine compresses data in accordance with a compression algorithm which selects entries of a PCORDS table based upon an analysis of input data. While De Maine is identified as describing the generation of a position code, the aspect of De

[5] See Specification at page 6 explaining frequency analysis and relationship analysis of groups of bits in the input data string.
[6] See Figure 1; Specification at page 7.
[7] See Specification at page 9.

Maine cited as corresponding to this feature does not include the more detailed aspects of Applicant's amended claims. For example, De Maine does not describe or suggest generating the position code using an identified control code in cooperation with a position code routine associated with the identified control code for determining positions of each of the 2^n different configurations of n bits in the input data string. Moreover, De Maine does not describe or suggest the comparison of 2^n different configurations of the input data string with the associated 2^n bit configurations of the identified control code, the comparisons resulting in output values dictated by the position code routine which defines the generated position code as recited in Applicant's amended claims. Finally, De Maine is also cited as describing the combination of a control code and position code as components of an encrypted data string. However, De Maine does not disclose or suggest the more detailed aspect of the Applicant's amended claims which requires that the components of the encrypted data string be an identified control code and a generated position code in accordance with the definition of these terms recited in the Applicant's amended claims.

Likewise, Cellier discusses the identification of a specific Huffman table based upon a minimum cost search. Cellier describes identification of a table via code. To extent that this aspect of Cellier is considered a "control code" in accordance with the Applicant's claims, Cellier does not describe or suggest that the control code defines respective orders of n bit combinations of binary data as recited in the Applicant's amended claims.
Finally, Witten does not remedy any of the deficiencies discussed above.

Accordingly, Applicant respectfully requests that the rejection of Claims 1, 3, 5, 8-10, 21-23, 25, 26, 29-40, 44-55, and 59-61 under 35 U.S.C. § 103 be withdrawn.

The outstanding Official Action has rejected Claims 6, 7, 27, and 28 under 35 U.S.C. §103 as being unpatentable over De Maine, Cellier and Witten as applied to Claims 5 and 26, respectively, and further in view of Shimizu. The Official Action contends that De Maine,

Cellier and Witten disclose all of the Applicant's claim features, with the exception of generating a random block size. However, the Official Action cites Shimizu as disclosing this more detailed aspect of the Applicant's claimed advancement and states that it would have been obvious to one skilled in the art at the time the advancement was made to combine the cited references for arriving at the Applicant's claims. Applicant respectfully traverses the rejection.

As neither De Maine, Cellier nor Witten alone, or in combination, disclose all of the features of the Applicant's amended claims, and as Shimizu does not remedy the deficiency discussed above, Applicant respectfully submits that a *prima facie* case of obviousness has not been presented.

Accordingly, Applicant respectfully requests that the rejection of Claims 6, 7, 27, and 28 under 35 U.S.C. § 103 be withdrawn.

The outstanding Official Action has rejected Claims 41, 42, 56, and 57 under 35 U.S.C. § 103 as being unpatentable over De Maine, Cellier and Witten as applied to Claim 1, and further in view of Weiss (U.S. Patent No. 5,479,512). The Official Action contends that De Maine, Cellier and Witten disclose all of the Applicant's claim features, with the exception of XOR'ing coded data. However, the Official Action cites Weiss as disclosing this more detailed aspect of the Applicant's claimed advancement and states that it would have been obvious to one skilled in the art at the time the advancement was made to combine the cited references for arriving at the Applicant's claims. Applicant respectfully traverses the rejection.

As neither De Maine, Cellier nor Witten, alone, or in combination, disclose all of the features of the Applicant's amended claims, and as Weiss does not remedy the deficiency discussed above, Applicant respectfully submits that a *prima facie* case of obviousness has not been presented.

Accordingly, Applicant respectfully requests that the rejection of Claims 41, 42, 56, and 57 under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present Application, including Claims 1, 3, 5-10, 21- 23, 25-45, 47-60 and 62, is patently distinguished over the prior art, in condition for allowance, and such action is respectfully requested at an early date.

Respectfully submitted,

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